CHAPTER 222. ISSUE/RENEW A LETTER OF AUTHORIZATION FOR OPERATIONS IN SPECIAL USE AIRSPACE

SECTION 1. BACKGROUND

1. PROGRAM TRACKING AND REPORTING SUBSYSTEM (PTRS) ACTIVITY CODE:

- North Atlantic: 1406
- Other: 1408

3. OBJECTIVE. The objective of this task is to issue a letter of authorization (LOA) to a general aviation operator planning a flight in special use airspace. Guidance to inspectors issuing operations specifications to air carriers planning flights in special use airspace is contained in Federal Aviation Administration (FAA) Order 8400.10, Air Transportation Operations Inspector's Handbook.

5. BACKGROUND. Special use airspace is international airspace where navigation performance standards are governed by international agreements, separation minimums are reduced, and the standards of navigation performance accuracy are strictly enforced. In this chapter, particular emphasis is placed on Minimum Navigation Performance Specification (MNPS) airspace in the North Atlantic (NAT) region. Inspectors should be familiar with the information in this chapter and with the contents of Advisory Circular (AC) 91-70, Oceanic Operations, An Authoritative Guide to Oceanic Operations, before processing an LOA for operations in special use airspace. That advisory circular is a composite of relevant documents that existed in the Flight Standards Policy Subsystem before January 1, 1993, and should be used as a reference in lieu of older documents that may not yet have been canceled. If any questions should arise with regard to the issuance of an LOA, principal inspectors should request guidance from a navigation specialist at one of the following locations: the San Francisco (SFO) International Field Office (IFO) at (415) 876-2765, the New York (NYC) Flight Standards District Office (FSDO) at (718) 553-1848, or the Safety and Analysis Branch, AFS-540, at (703) 661-0333.

7. GENERAL REQUIREMENTS FOR OCEANIC OPERATIONS. Inspectors should be aware of the requirements imposed on operators for flights in special use airspace. Operator, as used in this chapter, is defined to mean one who exerts operational control as defined in Title 14 of the Code of Federal Regulations (14 CFR) part 1, § 1.1.

A. Navigation Equipment and Procedures. Approved navigation equipment must be installed in accordance with a supplemental type certificate or a field approval. In either case, the operations inspector should coordinate with the principal avionics inspector to ensure that the equipment installation is acceptable.

B. Operations Manual Requirements. Although not required by regulation, operators should be encouraged to prepare an International Operations Procedures Manual. Either a journey logbook or a navigation log is required by International Civil Aviation Organization (ICAO) for any aircraft engaged in international navigation and is regulatory for U.S.-registered aircraft under 14 CFR part 91, § 91.703. In either case, the information should be accessible to the flightcrew. The manual should include specific preflight, in-flight, and postflight procedures. The manual should specify the crewmember(s) responsible for inserting waypoints in the long-range navigation systems (LRNS) and for verification of the waypoint insertions, and should also identify the source of the waypoint information. Much of this information will depend upon the type of LRNS equipment in use. Procedures for logging equipment accuracy should be explained. If a manual is developed, the log should be depicted in the manual, and a sample log page should be submitted to the approving office. Plotting chart procedures should also be included in the manual, and a completed sample chart should be submitted. An LRNS checklist should be incorporated with the regular aircraft checklists and should include procedures in case of LRNS equipment failure.

C. Communication Equipment Required. ICAO rules state that an aircraft operated on a flight plan shall maintain continuous listening watch on the appropriate radio frequency and establish two-way communication, as necessary, with the appropriate air traffic control (ATC) facility, except as prescribed by

the ATC authority in regard to an aircraft forming part of the air traffic pattern at a controlled airport. In addition, Canadian regulations require that aircraft flying in or departing from Canadian airspace for transoceanic flights have the following communications equipment installed on the aircraft. These requirements are in addition to applicable requirements of part 91.

(1) In order to maintain communication capability, high frequency (HF) communications equipment is normally used by each aircraft crossing the Atlantic. The only exception is for aircraft flying at flight level (FL) 250 or above on specific routes crossing Greenland. In the oceanic control areas (OCA) and flight information regions (FIR), very high frequency (VHF) coverage is not sufficient to ensure continuous two-way communications with ground stations. Although relay through other aircraft is possible, it is not guaranteed.

(2) VHF equipment shall include 121.5 MHz capability. A listening watch should be maintained on 121.5 MHz unless communication on another frequency prevents this. Frequency 121.5 MHz is not authorized for routine use; 123.45 or 131.8 MHz should be used for air-to-air communications.

D. Crew Qualification Requirements. In the International Standards and Recommended Practices - Annex 6, Operation of Aircraft, ICAO makes the following stipulations for flights outside the jurisdiction of member states.

(1) An operator shall ensure that all employees, when abroad, know that they must comply with the laws, regulations, and procedures of those states where operations are conducted, and also comply with the relevant laws, regulations, and procedures of their state of registry.

(2) An operator shall ensure that all pilots are familiar with the laws, regulations, and procedures pertinent to the performance of their duties that are prescribed for the areas to be traversed, the airports to be used, and the related air navigation facilities. The operator shall ensure that other members of the flightcrew are familiar with those laws, regulations, and procedures that are pertinent to the performance of their duties.

(3) Operators shall ensure that all pilots-in-command (PIC) understand that, if a deviation in an emergency situation violates local regulations or procedures, the PIC shall notify the appropriate local authorities without delay. If required by the state where the incident occurs, the PIC shall submit a report on any such violation to the appropriate authority of that state.

(4) An operator shall not use a pilot as PIC of an aircraft on a route or route segment for which that pilot is not currently qualified until that pilot has satisfied the knowledge requirements of the following:

(a) the route to be flown and the airports to be used;

(b) the terrain and minimum safe altitudes;

(c) the seasonal meteorological conditions;

(d) the meteorological, communication and air traffic facilities, services and procedures;

(e) search and rescue procedures; and

(f) the navigational facilities and procedures, including any long-range navigation procedures associated with the planned route.

E. Pilot Qualification. The minimum pilot qualification for any oceanic flight is a private pilot certificate. An instrument rating is required if operating at or above 6000 feet pressure altitude in the NAT region. Some states (for example, Canada) require pilots to hold an instrument rating for operating at any altitude in the NAT region under their jurisdiction; therefore, it is imperative that pilots are acquainted with state's varying legislative requirements. Pilots must comply with the regulations imposed by the state of registry of the aircraft being flown and with the regulations of countries in which they land or overfly. Irrespective of the mandatory requirements, inspectors should strongly recommended that all pilots hold a valid instrument rating. In addition to cross-country flight time, the demanding nature of the oceanic operational environment requires that the PIC meet the recency of experience requirements stipulated by the state of registry, have adequate recent flight experience in the use of long-range navigation equipment and communications equipment, and have training in dead reckoning navigation techniques.

F. Training Curriculum Content. Experience has clearly demonstrated that the presence of sophisticated navigational equipment on board an aircraft does not, by itself, ensure that a high level of performance will be achieved. It is essential that operators provide adequate training for the personnel operating or maintaining the equipment, and that operating drills and procedures are included in crew training. Air carrier operators' training programs are approved in conjunction with their certification and subsequent issuance of operations specifications. Questions concerning the acceptability of training should be referred to the oceanic operations focal point in either the regional office or to the Safety and Analysis Branch, AFS-540, at (703) 661-0333. Inspectors should strongly recom-

mend that the crew qualifications include, as a minimum, the subjects listed below.

(1) ICAO operational rules and regulations;

(2) ICAO measurement standards;

(3) use of oceanic flight planning charts;

(4) sources and content of international flight publications;

(5) itinerary planning;

(6) preparation of FAA international flight plans, ICAO flight plans, and flight logs;

(7) route planning within the special use airspace where flights are to be conducted;

(8) en route and terminal procedures (different from U.S. procedures);

(9) long-range, air-to-ground, communication procedures;

(10) structure of the special use airspace where the flights are to be conducted;

(11) air traffic clearances;

(12) international meteorology, including significant weather charts, prognostic weather charts, tropopause prognostic charts, and terminal weather forecasts (TAF);

(13) specific en route navigation procedures for each type of navigation equipment required for use in the special use airspace, including abnormal procedures;

(14) emergency procedures, including required emergency equipment, search and rescue techniques, and navigation and communications equipment failure techniques; and

(15) if operations are to be conducted in areas of magnetic unreliability, specialized training must be given.

9. SPECIAL USE AIRSPACE REQUIREMENTS.

A. When Authorization is Required. There is no requirement for a general aviation operator to obtain authorization for oceanic operations outside of a designated special use airspace. However, the inspector may be called upon to advise pilots desiring to obtain information on oceanic operations. In addition to the guidance in this chapter, AC 91-70 contains detailed information on most aspects of oceanic operations.

B. ICAO Requirements. When conducting oceanic flights, pilots of U.S.-registered aircraft must adhere to the U.S. regulations, ICAO rules, and the regulations of the nations that they overfly or where they land. This requirement is based upon the Convention on International Civil Aviation, commonly known as the Chicago Convention. Flight regulations for oceanic operations are specifically covered in Annex 2, Rules of the Air, and Annex 6, Part II, International General Aviation - Aeroplanes. Section 91.703 ensures that ICAO rules are regulatory to operators of U.S.-registered aircraft operating in oceanic airspace.

11. NAT REGION OCEANIC OPERATIONS.

A. NAT Region. The majority of the airspace in the NAT region is controlled airspace. Instrument flight rules (IFR) apply to all flights at or above FL 60 or at 2000 feet above ground level, whichever is higher. Within the NAT region, two types of special use airspace have been structured. The first of these is MNPS airspace, which has been operational for many years. The second special use airspace is Reduced Vertical Separation Minimum (RVSM) airspace. RVSM airspace is any airspace or route where aircraft are separated by 1,000 feet vertically between FL 330 and FL 370. Interim guidance for approvals to authorize operation in this airspace is contained in 91-RVSM, Approval of Aircraft and Operators for Flight in Airspace Above Flight Level (FL) 290 Where a 1,000 Foot Vertical Separation Minimum is Applied. This is a draft document that will become an Advisory Circular following enactment of an RVSM regulation.

B. MNPS Airspace. MNPS airspace is that portion of the NAT airspace between FL 275 and FL 400, between latitudes 27 1/2 N and the North Pole; bounded in the east by the eastern boundaries of control areas (CTA) Santa Maria Oceanic, Shanwick Oceanic, and Reykjavik; and bounded in the west by the western boundary of CTA's Reykjavik and Gander Oceanic, and New York Oceanic east of longitude 60 ° W and south of 38°30'N. All aircraft operating in MNPS airspace are required to have a specified minimum navigation performance capability that has been approved by the state of registry or by the state of the operator, as appropriate. The approval process includes all aspects of the required navigation accuracy, navigation equipment required, installation and maintenance procedures, and crew training. The integrity of MNPS airspace is maintained by a series of procedures that include approval of navigation equipment and procedures plus continuous monitoring of the navigation accuracy of aircraft using MNPS airspace. It is implicit in the concept of MNPS airspace and essential to the application of the lateral separation minimums that all operations in MNPS airspace achieve the highest standards of navigation performance accuracy. The obligations of the operator

and crew operating under part 91 for flight in MNPS airspace can be summarized as follows:

(1) the operator must have an LOA from the state of registry for that aircraft;

(2) the approved aircraft minimum navigation installations must be operable and must have been checked for accuracy, airborne by the flight crew, before entry into MNPS airspace;

(3) approved operating procedures must be followed while in MNPS airspace, and deviations from track must not be made without prior ATC clearance, except in an emergency;

(4) ATC must be advised in the event of navigation equipment failure or navigation uncertainty;

(5) there must be a high standard of supervision, monitoring, and cross-checking of data inserted into automatic navigation systems;

(6) coordination must be maintained with ATC to ensure that misunderstandings over the route to be flown do not occur; and

(7) RVSM authorization should be noted in the LOA for operators wishing to operate in RVSM airspace.

(a) Additionally, for 14 CFR part 125 operators, approval to operate in RVSM airspace is indicated in Part B of the operations specifications.

(b) Operators operating in RVSM airspace are required to participate in the monitoring program. The operator can currently participate in the program by overflying the fixed-location height monitoring unit (HMU) located at Strumble, England, or by carrying a portable GPS-based monitoring unit (GMU). Operators requiring the use of a GMU should contact the ARINC RVSM Program Office at (410) 266-4746.

C. Navigation Performance Requirements. For approval of unrestricted operation in NAT MNPS airspace, an aircraft must be equipped with two fully serviceable and independent LRNS's. Acceptable LRNS's include an inertial navigation system (INS), Omega navigation system, a technical standard order (TSO) C-129 approved global positioning system (GPS) (use of and approval of GPS is detailed in paragraphs 13 and 15 of this section), and flight management computer systems (FMCS) with inputs from one or more inertial reference systems (IRS), Omega sensors, or approved GPS sensors. Each LRNS must be capable of providing a continuous indication of the aircraft's position relative to track. When coupled with an FMCS for automatic flight guidance, INS and an inertial sensor system (ISS)/IRS have demonstrated a capability to meet MNPS requirements. Some smaller aircraft may carry two IRS's (or ISS) but only one FMCS. Such an arrangement may meet track-keeping parameters, but does not provide the required redundancy (in terms of continuous indication of position relative to track or of automatic steering guidance) should the FMCS fail. In this case, dual FMCS is required to obtain MNPS certification. The use of Doppler equipment (having a capability of displaying drift, groundspeed and crosstrack error) has been approved, on occasions, in conjunction with single INS, Omega, or Omega/very low frequency (VLF) for operations in NAT MNPS airspace. However, such approvals are considered to be at the lowest acceptable level of navigation fit suitable for the MNPS. Doppler requires that continuous attention be paid to in-flight rating of, and compensation for, systematic errors to guard against failure of the other navigational aid (navaid). Thus, use of Doppler and one other LRNS cannot be recommended for unrestricted MNPS operations.

D. Routes for Aircraft with Only One LRNS. A number of special routes have been developed for aircraft equipped with only one LRNS. These routes are within MNPS airspace and require an LOA. Aircraft that are equipped with normal short-range navigation equipment (VHF omni-directional radio range (VOR)/distance measuring equipment (DME), automatic direction finding (ADF)) and at least one fully operational LRNS should be considered capable of meeting the MNPS while operating along the routes listed below. Routes, listed below, were known as "Blue Spruce" routes and are now referred to as "special" routes. Continuous VHF coverage exists on these routes at FL 300 and above, except as noted. Inspectors issuing an LOA for routes approved for aircraft with only one LRNS must note this limitation on the LOA. This should be entered on the line entitled "Aircraft Limitations" (see figure 222-1) and must be stated in one of the following formats:

(1) A listing of the specific route(s) authorized.

(2) A statement "All routes authorized for aircraft with only one LRNS in chapter 222, section 2, FAA Order 8700.1."

(3) A statement "See reverse side of this LOA." (If this statement is used, the routes must be specified on the reverse side of the LOA with a line drawn under the last route for which approval is given followed by the office manager's signature.)

- Stornoway } - 60N 10W - 61N 12 34W - ALDAN - Keflavik; (HF required on this route)
  Benbecula } - 61N 10W - ALDAN - Keflavik (VHF coverage exists, and subject to prior coordination with Scottish Airways and Shanwick, this route can be used by non HF equipped aircraft.)
- Machrihanish }
  Glasgow } - 57N 10W - 60N 15W - 61N16 30W - BREKI -
  Shannon } Keflavik; (HF is required on this route)
  Belfast }
- Keflavik - GIMLI - Kulusuk - Sondre Stromfjord - Frobay (HF is required on this route);
- Keflavik - EMBLA - 63N 30W - 61N 40W - Prins Christian Sund;
- Prins Christian Sund - 59N 50W - PRAWN - NAIN;
- Prins Christian Sund - 59N 50W - PORGY - Hopedale;
- Prins Christian Sund - 58N 50W - LOACH - Goose VOR;
- Cork } - LOACH - Goose VOR;
  Lands End - Gapli } (HF is required on this route);
- Funchal/Porto Santo - Santa Maria/Ponta Delgada/Lajes;
- Lisboa/Porto/Faro - Ponta Delgada/Santa Maria/Lajes;
- between Greenland and Canada (HF is required over the Greenland icecap below FL 195):
  - Sondre Stromfjord NDB 67N 60W, Cape Hooper NDB;
  - Kook Islands NDB, 66N 60W, Cape Dyer NDB;
  - Kook Island NDB, 66N 60W, 64N 63W, Frobay VOR; and
- between Iceland and Greenland: Reykjanesskoli NDB, 69 30N 22 40W, Constable Pynt NDB.

E. Routes for Aircraft with Short-Range Navigational Equipment. The following routes may be flown by aircraft with short-range navigation equipment (VOR/DME, ADF), but an LOA for operation within MNPS airspace is still necessary:

(1) Flesland - Myggenes - INGO - Keflavik (G3)

(2) Sumburgh - Akraberg - Myggenes (G11)

NOTE: Inspectors issuing an LOA for routes approved for aircraft with short-range navigational equipment must note this limitation on the LOA. The limitation should be entered as follows: A statement "All routes authorized for aircraft with short-range navigation equipment in chapter 222, section 2, FAA Order 8700.1."

F. Special Provisions for Aircraft Not Equipped for Operation in MNPS Airspace to Climb or Descend through MNPS Airspace. Some aircraft, particularly higher performance international general aviation (IGA) aircraft, operate at flight levels above the upper limit of MNPS airspace (FL 410 and above). Depending on their point of departure, such aircraft often require a comparatively brief penetration of MNPS airspace. In order that these aircraft are not unduly penalized by being excluded from operating at their most economic cruising level, provisions are made for climb and descent through MNPS. The NAT Special Planning Group agreed to the following provisions on the understanding that these would be published in the relevant aeronautical information publications (AIP) by the states concerned, stating the VOR/DME's to be used and indicating those parts of the MNPS airspace which may be affected by this procedure. Aircraft not equipped for operation in MNPS airspace may be cleared by the responsible ATC unit to climb or descend through MNPS airspace provided the following circumstances exist:

(1) the climb or descent can be completed within the usable coverage of selected VOR/DME's and/or within the radar coverage of the ATC unit issuing such clearance;

(2) the aircraft is able to maintain direct pilot-controller communications on VHF; and

(3) MNPS authorized aircraft operating in that part of the MNPS airspace affected by such climb or descent are not penalized by the application of this procedure.

13. USE OF GPS EQUIPMENT. Inspectors should note that the information in this chapter is the most current information available at the time of publication. As additional information becomes available, this guidance will be updated through issuance of bulletins or revisions to this chapter.

A. GPS Navigation. The GPS is a satellite-based radio navigation system that uses precise range measurements from GPS satellites to determine a precise position anywhere in the world. The GPS constellation consists of 24 satellites in various orbital planes approximately 11,000 nautical miles (nm) above the earth. The satellites broadcast a timing signal and data message that the airborne equipment processes to obtain satellite position and status data, and to measure how long each satellite's radio signal takes to reach the receiver. By knowing the precise location of each satellite and precisely matching timing with the atomic clocks on the satellites, the receiver can accurately measure the time the signal takes to arrive at the receiver and thus determine the satellite's precise position. A minimum of three satellites must be in view to determine a two-dimensional position. Four satellites are required to establish an accurate three-dimensional position. GPS equipment determines its position by precise measurement of the distance from selected satellites in the system and the satellite's known location. The accuracy of GPS position data can be affected by various factors. Many of these accuracy errors can be reduced or eliminated with mathematics and sophisticated modeling, while other sources of errors cannot be corrected. The following are examples of those errors which cannot be corrected:

(1) Atmospheric propagation delays can cause relatively small measurement errors, typically less than 100 feet. Ionospheric propagation delays can be partially corrected by sophisticated error-correction capabilities.

(2) Slight inaccuracies in the atomic clocks on the satellites can cause a small position error of approximately 2 feet.

(3) Receiver processing (such as mathematical rounding and electrical interference) may cause errors that are usually either very small (which may add a few feet of uncertainty into each measurement) or very large (which are easy to detect). Receiver errors are typically on the order of 4 feet.

(4) Conditions that cause signal reflections before the satellite's transmitted signal gets to the receiver can cause small errors in position determination or momentary loss of the GPS signal. While advanced signal processing techniques and sophisticated antenna design are used to minimize this problem, some uncertainty can still be added to a GPS measurement.

(5) A satellite's exact measured orbital parameters (ephemeris data) can contain a small error of approximately 4 feet.

B. System Operation.

(1) The Department of Defense (DOD) is responsible for operating the GPS satellite constellation and constantly monitors the GPS satellites to ensure proper operation. Every satellite's ephemeris data are sent to each satellite for broadcast as part of the data message sent in the GPS signal. The GPS is a system of cartesian earth-centered, earth-fixed coordinates as specified in the DOD World Geodetic System 1984 (WGS-84). Navigation values, such as groundspeed and distance and bearing to a waypoint, are computed from the aircraft's latitude/longitude and the location of the waypoint. Course guidance is usually provided as a linear deviation from the desired track of a Great Circle course between defined waypoints.

(2) GPS navigation capability from the 24 satellite constellation is available 24 hours a day anywhere in the world. GPS status is broadcast as part of the data message transmitted by the satellites. Additionally, system status is planned to be available through Notices to Airmen (NOTAM). Status information is also available by means of a telephone data service from the U.S. Coast Guard. Availability of suitable navigation capability from the satellite constellation is expected to approach 100 percent.

(3) GPS signal integrity monitoring will be provided by the GPS navigation receiver using receiver autonomous integrity monitoring (RAIM). For GPS sensors that provide position data only to an integrated navigation system (e.g., flight management system (FMS), multisensor navigation system), a level of GPS integrity equivalent to that of RAIM may be provided by the integrated navigation system. Availability of RAIM capability to meet nonprecision approach requirements in the United States with the 24 satellite constellation is expected to exceed 99 percent.

C. Selective Availability (SA). SA is essentially a method by which DOD can artificially create a significant clock and ephemeris error in the satellites. This feature is designed to deny an enemy nation or terrorist organization the use of precise GPS positioning data. SA is the largest source of error in the GPS system. When SA is active, the DOD guarantees horizontal position accuracy will not be degraded beyond 100 meters 95 percent of the time, and beyond 300 meters 99.99 percent of the time.

D. Portable Units. All portable electronic systems and portable GPS units must be handled in accordance with the provisions of § 91.21. The operator of the aircraft must determine that each portable electronic device will not cause interference with the navigation and communications systems of the aircraft on which it is to be used. Portable GPS units which are attached by Velcro tape or hard yoke mount that require an antenna (internally or externally mounted) are considered to be portable electronic devices and are subject to the provisions of § 91.21. All portable GPS equipment attached to the aircraft by a mounting device must be installed in an approved manner and in accordance with 14 CFR part 43. Questions concerning installation should be referred to an avionics or airworthiness inspector. A critical aspect of any GPS installation is the installation of the antenna. Shadowing by the aircraft structure can adversely affect the operation of the GPS equipment. FAA approval of avionic components, including antennas, requires an evaluation of the applicable aircraft certification regulations prior to approval of an installation. The regulations require that the components perform their intended functions and be free of hazards in and of themselves and to other systems as installed. Pilots should be aware that a GPS signal is weak, typically below the value of the background noise. Electrical noise or static in the vicinity of the antenna can adversely affect the performance of the system. It is recommended that system installations be flight tested in conjunction with other navigation equipment prior to using the system for actual navigation. Unless a portable GPS receiver is TSO C-129 approved, it is not to be used as a basis for approval of operations in the NAT MNPS.

E. Navigation Classes. All navigation performed in flight is either Class I or Class II navigation.

(1) Class I navigation: Any en route flight operation or portion of a flight operation conducted in an area entirely within the officially designated operational service volumes of ICAO standard airways navigation facilities (VOR, VOR/DME, NDB). The two generic types of Class I navigation are navigation by direct reference to ICAO standard navaid's and navigation by use of area navigation systems.

(2) Class II navigation: Any operation or portion of an en route operation which takes place outside (beyond) the officially designated operational service volumes of ICAO standard navaid's (VOR, VOR/DME, NDB). Any en route flight operation or portion of a flight operation which is not Class I navigation. There are three generic classes of Class II navigation. These are navigation by reference to ICAO standard navaid's supplemented by dead reckoning, navigation by use of pilot-operated electronic LRNS's (e.g., INS, Omega, GPS), and navigation by use of a flight navigator.

F. RAIM. A technique whereby a civil GPS receiver/processor determines the integrity of the GPS navigation signals using only GPS signals or GPS signals augmented with altitude. This determination is achieved by a consistency check among a series of satellites being tracked. At least one satellite in addition to those required for navigation must be in view for the receiver to perform the RAIM function.

G. Supplemental Air Navigation System. An FAA-approved navigation system that can be used in addition to a required means of air navigation. It may be used as the primary navigation system provided an operational approved alternate means of navigation suitable for the route of flight is installed on the aircraft.

H. System Availability. The percentage of time (specified as 98 percent) that at least 21 of the 24 satellites must be operational and providing a usable navigation signal.

15. FAA OPERATIONAL APPROVAL OF GPS EQUIPMENT.

A. GPS Equipment Classes. GPS equipment is categorized into classes A(), B(), and C() (ref. TSO-C129).

(1) Class A(). Equipment incorporating both the GPS sensor and navigation capability. This equipment incorporates RAIM.

(a) Class A1 equipment includes en route, terminal, and nonprecision approach navigation capability.

(b) Class A2 equipment includes en route and terminal navigation capability only.

(2) Class B(). Equipment consisting of a GPS sensor that provides data to an integrated navigation system (i.e., FMS, multi-sensor navigation system, etc.).

(a) Class B1 equipment includes RAIM and provides en route, terminal, and nonprecision approach capability.

(b) Class B2 equipment includes RAIM and provides en route and terminal capability only.

(c) Class B3 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route, terminal, and nonprecision approach capability.

(d) Class B4 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route and terminal capability only.

*(3) Class C().*Equipment consisting of a GPS sensor that provides data to an integrated navigation system (i.e., FMS, multi-sensor navigation system, etc.), which provides enhanced guidance to an autopilot or flight director in order to reduce flight technical error. Installation of Class C() equipment is limited to aircraft approved under 14 CFR part 121 or equivalent criteria.

(a) Class C1 equipment includes RAIM and provides en route, terminal, and nonprecision approach capability.

(b) Class C2 equipment includes RAIM and provides en route and terminal capability only.

(c) Class C3 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route, terminal, and nonprecision approach capability.

(d) Class C4 equipment requires the integrated navigation system to provide a level of GPS integrity equivalent to RAIM and provides en route and terminal capability only.

*B. Approval Criteria.*A GPS installation with a TSO C-129 authorized navigation system in Class A1, A2, B1, B2, C1, or C2 may be used in combination with other approved LRNS for unrestricted operations in NAT MNPS airspace or may be used as the sole means of long-range navigation on the special routes that have been developed for aircraft equipped with only one LRNS and on the special routes developed for aircraft equipped with short-range navigation equipment. The basic integrity for these operations must be provided by RAIM or an equivalent method. A single GPS installation in Class A1, A2, B1, B2, C1, or C2 which provides RAIM for integrity monitoring may also be used on those short oceanic routes which have only one required means of long-range navigation.

*C. Avionics.*Documentation must be provided which validates approval of the installed GPS airborne receiver in accordance with Notices 8110.47, 8110.48, AC 20-129, and AC 20-130A, as appropriate, or other applicable airworthiness criteria established for GPS installations. When it has been established that the airborne system has been certified for GPS IFR operations, the following criteria should be used to determine the operational suitability of airborne systems for GPS IFR use.

*D. Initial Installations and Continued Airworthiness.*The operator must assure that the equipment is properly installed and maintained. No special requirements, other than the standard practices currently applicable to navigation or landing systems, have been identified that are unique to GPS; e.g., Airworthiness Directives, Service Bulletins.

*E. Action.*Aviation safety inspectors (ASI) must evaluate installation (an avionics inspector should evaluate the avionics installation and recommend the approval prior to the issuance of an LOA to operate in NAT MNPS airspace), crew capabilities, and operational responsibilities relative to GPS oceanic operations prior to issuing an LOA for operation in MNPS. Specific items to check are as follows:

(1) The GPS navigation equipment used must be approved in accordance with the requirements specified in TSO C-129 and the installation must be made in accordance with Notice 8110.47 or 8110.48 or the AFS/AIR joint guidance memorandum dated July 20, 1992.

(2) The basic integrity for these operations must be provided by RAIM or an equivalent method.

(3) The GPS operation must be conducted in accordance with the FAA-approved flight manual or flight manual supplement, if required.

(4) Aircraft using GPS equipment under IFR must be equipped with an approved and operational alternate means of navigation appropriate to the route to be flown. This traditional navigation equipment must be actively used by the flight crew to monitor the performance of the GPS system.

(5) Procedures must be established for use in the event that significant GPS navigation outages are predicted to occur. In situations where this is encountered, the flight must rely on other approved equipment, delay departure, or cancel the flight.

(6) Aircraft navigating by GPS are considered to be RNAV aircraft. Therefore, the appropriate equipment suffix must be included in the ATC flight plan.

17. FLIGHT INFORMATION. Operators must supply or ensure that the information necessary to plan, conduct, and control operations is available to operational control and flightcrew personnel. Most of this data can be obtained through subscriptions to a government service or to a commercial aeronautical information and charting service. Operators should be expected to supplement these services if necessary and, in all cases, are responsible for ensuring that the information used is accurate and complete. Operators must also supply other data, such as NOTAM's, track messages, and airport obstruction data, when appli-

cable. Omega, Loran, and GPS advisories are available by computer modem to a special bulletin board operated by the GPS Information Center of the Coast Guard. Call (703) 313-5910. A 24-hour voice bulletin board is also available by calling (703) 313-5907.

A. Airport and Facilities. The Airport/Facility Directory (A/FD) contains information on airports and facilities that is needed by flight crewmembers and operational control personnel. For example, the information that certain runways are closed to air carrier aircraft may be contained in the Airport Remarks section for each airport listed in the A/FD. Inspectors should inform their operators that such information is removed from the NOTAM's system when it is published in the A/FD. This information is obtained from the AIP's of the country for operations outside the United States. Also, inspectors should ensure that operators understand their requirement to make the A/FD information (for those airports at which operations are conducted) available to their personnel.

*B. NOTAM's.*Operators must provide NOTAM's to flightcrews and operational control personnel for domestic and international operations in airspace covered by NOTAM systems. U.S. NOTAM's are edited into final form and distributed by the United States NOTAM Office (USNOF). NOTAM's are disseminated by two methods: electronically through what is termed Service A, and in printed form through the biweekly publication, Notices to Airmen. In general, NOTAM's originally appear in electronic form and are later incorporated in the biweekly publication. Once incorporated in writing, they are no longer transmitted electronically. NOTAM information is classified into the following three groups: NOTAM (D)'s, NOTAM (L)'s, and FDC NOTAM's. These groups, subdivisions of these groups, and other information concerning the NOTAM system are described below.

NOTE: Refer to FAA Order 7930.2 and the Aeronautical Information Manual (AIM) for detailed descriptions of the current NOTAM system.

*(1) NOTAM (D)'s.*NOTAM (D), or distant dissemination information, pertains to navaid's, landing areas, airport runway lighting facilities, and other data that is normally not published, such as parachute jumping areas, restricted areas, and some air shows. NOTAM (D)'s are appended to electronically transmitted weather reports, such as the Service A network. NOTAM (D)'s are disseminated for all navaid's that are part of the National Airspace System as well as all public-use airports, seaplane bases, and heliports listed in the A/FD.

*(a) Center Area NOTAM's (CAN).*CAN's are issued on airway changes within controlled airspace, and they are transmitted as FDC NOTAM information on Service A.

*(b) Special Notices.*Special notices concern matters having a significant impact on flight safety. They are transmitted only once on Service A, and then are published in the biweekly, Notices to Airmen. An example of the kind of information carried in the Special Notices Section is that of available landing distances when land-and-hold-short operations are in effect (formerly known as SOIR: simultaneous operations on intersecting runways).

*(c) LRN NOTAM's.*Loran systems are covered by NOTAM's. While these are technically NOTAM (D)'s, they are grouped in a special file entitled Long-Range Navigation (LRN) NOTAM's. Omega navigational system outages are also listed in the LRN NOTAM file. These NOTAM's may be obtained from any flight service station (FSS) on request, or by phoning the Naval Observatory at (202) 653-1757.

*(2) NOTAM (L)'s.*NOTAM (L), or local information, includes such information as airport and taxiway construction and certain airport lighting. This information is directly relevant to surface movement guidance and control. NOTAM (L)'s can also contain information that is expected to be in effect for less than 1 hour concerning navaid's, lighting, and runways. NOTAM (L)'s are not normally transmitted beyond the area of coverage for the local FSS or automated flight service station (AFSS).

*(a) Principal Operations Inspector (POI) Responsibility.*POI's must ensure that specific procedures for the acquisition and dissemination of local NOTAM information to flightcrews and operational control personnel are readily available.

(b) Obtaining NOTAM (L) Information. This information may be obtained from the FSS having responsibility for the geographic area in which the destination airport is located. Another acceptable means for operators to acquire this information is to task an authorized agent with collecting this information and reporting it to the operator's operational control center.

NOTE: FAA inspectors and National Transportation Safety Board (NTSB) accident investigators have reported that a failure of operators to provide NOTAM (L) data to flightcrews has been a contributing factor in several accidents and incidents. For example, a part 121 operator dispatched a flight of approximately 30 minutes duration to a destination at which the instrument landing system

was reported by NOTAM (L) to be out of service.

NOTE: The details of what is included as NOTAM (D) and NOTAM (L) data are quite complex (see FAA Order 7930.2 for more specific information).

(3) National Flight Data Center (FDC) NOTAM's. FDC NOTAM's are issued by the USNOF and are regulatory in nature. They are transmitted electronically and are transmitted nationally only once. After national transmission, FDC NOTAM's are normally only maintained in a file by FSS's and AFSS's within 400 nm of the respective FDC location. FDC NOTAM's are canceled by a one-time notice that is transmitted electronically. FDC NOTAM's include, but are not limited to, the following:

- Interim IFR flight procedures
- Temporary flight restrictions
- Presidential (and other parties) flight
- restrictions
- Permanent 14 CFR part 139 certified airport condition changes pertaining to the Aircraft Rescue and Fire Fighting Equipment (ARFF) Index
- Snow conditions affecting glide slope operations
- Air defense emergencies
- Emergency flight rules
- Substitute airway routes

NOTE: Operators should clearly understand that since FDC NOTAM dissemination is normally limited to within 400 nm of the "tie-in" FSS/AFSS, a means must be devised to collect en route, destination, and alternate airport FDC NOTAM's that may impact operations.

NOTE: VLF stations are not covered by regular NOTAM's service, but the Naval Observatory does provide certain information at (202) 653-1757.

(4) GPS NOTAM's. At present the GPS system is not covered by NOTAM's. GPS NOTAM requirements and specifications are currently under development.

(5) International NOTAM's. The means for transmission of International NOTAM's differs from that used for domestic NOTAM's. International NOTAM's are transmitted electronically to those operators that have arranged to receive them, and they are available, on a request-reply basis, for those offices with Aeronautical Fix Telecommunication (AFTN) circuits. For all other operators, they are available upon request by contacting the nearest FSS/AFSS. If the nearest FSS/AFSS is unable to supply the information, inspectors should advise FAA headquarters by phone at (202) 267-8343. As a last resort, they can contact the USNOF by phone at (202) 267-3390. International NOTAM's are also available from some commercial services.

(6) Operations Not Covered by NOTAM's. Operators may need to establish procedures or systems to develop or disseminate flight safety information concerning areas not covered by domestic or international NOTAM's, such as isolated airports or offshore operations.

(7) Limitations of FSS NOTAM Briefings. Inspectors and operators alike should be aware that printed NOTAM's contained in the biweekly Notices to Airmen are not provided by the FSS specialist unless specifically requested. Also, lengthy and graphically depicted NOTAM's, because of their complexity, are normally not obtainable during a telephone FSS briefing. Notwithstanding the above limitations, POI's must ensure that operators that direct their crews to obtain FSS briefings also make the following information available to flight crew and operational control personnel: electronically transmitted NOTAM's, local NOTAM's and other flight safety data, such as special notices and information from the Airport Remarks section of the A/FD.

C. Track Messages. Messages containing the coordinates of routes to be followed on flexible track systems such as the North Atlantic organized track structure are transmitted approximately every 12 hours. Western Pacific and Northern Pacific Track NOTAM's are available as international NOTAM's under the location identifiers of the respective air route traffic control center; examples are Oakland Center (KZOA) or Anchorage Center (PAZA). Flight crews operating over these routes are required to have all current valid track coordinates available in the cockpit to verify flight plan coordinates, should an in-flight rerouting become necessary. Inspectors must ensure that an operator's operational control personnel have this information for flight planning and flight monitoring purposes.

SECTION 2. PROCEDURES

1. PREREQUISITES AND COORDINATION REQUIREMENTS.

A. Prerequisites. This task requires knowledge of FAA policies, pertinent ICAO regulations and other applicable regulations, and qualification as an ASI (operations).

B. Coordination Requirements. This task may require coordination with the regional Flight Standards division, a designated FAA navigation specialist, the headquarters Safety and Analysis Branch, AFS-540, the airworthiness unit, and the avionics unit.

3. REFERENCES, FORMS, AND JOB AIDS.

A. References.

- AC 91-70, Oceanic Operations, An Authoritative Guide to Oceanic Operations
- 14 CFR parts 61 and 91
- TSO C-94
- Annexes to the Convention on International Civil Aviation

B. Forms.

- FAA Form 8000-36, Program Tracking and Reporting Subsystem Data Sheet

C. Job Aids.

- Format for an LOA to Operate in the NAT MNPS (figure 222-1)
- Format for Letter to Renew an LOA (figure 222-2)

5. THE APPROVAL PROCESS. The approval process for oceanic operations is used to ensure that those operations meet regulatory standards and provide for safe operating practices. The process consists of five phases that result in approving or not approving an applicant's proposal. The inspector must:

- accurately assess the character and scope of the proposal;
- determine if a demonstration is required;
- determine the need for any coordination requirements;
- ensure that the operator has a clear understanding of the minimum requirements that constitute an acceptable submission; and
- determine the date the operator intends to implement the proposal.

7. MNPS OPERATIONAL APPROVAL. In the United States, operational approval to fly in MNPS airspace is obtained by the issuance of operations specifications for certificated operators or by issuance of an LOA to a general aviation or commercial operator. During initial inquiries, it is important for the FAA and the operator to become familiar with the subject matter in section 1. Authorization for operations in NAT MNPS airspace requires FAA approval of crew qualifications as described in AC 91-70, approval of equipment installation and maintenance procedures, and verification that the ICAO Annex 6 requirements for navigation equipment redundancy are satisfied. Program Tracking and Reporting Subsystem (PTRS) entries will ensure that a data base of all FAA approvals for operation in special use airspace is maintained and available. Additionally, reports of oceanic operations deviations will be available from PTRS entries. These data bases will ensure that the United States meets two specific obligations as an ICAO member state. These obligations are that the states should maintain detailed records of all current IGA approvals, and that the responsibility for enforcement of flight rules that apply over the high seas rests with the aircraft's state of registry or the state of the operator.

9. PHASE ONE. Phase one is initiated when an applicant inquires about the need for an LOA.

A. Purpose of the LOA. Under § 91.705, operators of U.S. registered aircraft must be authorized by the Administrator to conduct operations in special use airspace. The issuance of an LOA (or operations specifications) satisfies the requirements of § 91.705(b). All LOA's will have a PTRS tracking number and expiration date. Renewal of the LOA may be accomplished by letter if the aircraft's equipment or the person responsible for international crew qualifications have not changed since the issuance of the previous LOA. If new equipment has been installed or a different person is responsible for international crew qualifications, a new application for an LOA must be made in the same manner as that required for the initial LOA. LOA's or LOA tracking numbers must be carried on the aircraft at all times when operating in MNPS airspace. The type of operation authorized will be specified in the LOA. These include unrestricted MNPS airspace authorization, restricted authorization for routes requiring one LRNS, routes for aircraft with

short-range navigation equipment, and restricted authorization for routes not requiring HF radios.

(1) A standard format LOA (figure 222-1) will be issued to grant approval for operations in MNPS airspace. The LOA must be typed in a standard letter format bearing an FAA letterhead, and must be signed by the FSDO manager.

(2) LOA's will have a 24 calendar-months validity period.

(3) Current LOA holders will be required to obtain a new LOA by October 1, 1996. New LOA's can be obtained in person or by mail by submitting a letter of request (in duplicate) in the format shown in figure 222-2. The request must include all of the information required in the standard LOA format shown in figure 222-1. One copy of the request will be retained in the district office. If the request is approved, the office manager will sign the other copy and return it to the operator. The signed copy will constitute authorization to operate in the NAT MNPS. Upon receipt of a signed LOA, operators must return any previously issued LOA to the district office within 30 days.

B. Applicant-FAA Communication. In phase one, the inspector must ensure that the operator clearly understands the requirements that must be met for the proposal to be approved by the FAA. It is essential for the operator to understand that, although the inspector may provide advice and guidance, the proposal submitted to the FAA for approval is solely the operator's responsibility. The operator must be informed of the benefits of submitting required documents as early as possible. The operator must also be aware of the responsibility to advise the FAA, in a timely manner, of any significant changes in the proposal.

C. Authorization Criteria for Issuance of LOA's. A listing of regulations pertinent to international operations is located in figure 222-4. Before receiving approval for operations in oceanic airspace, the operator must meet the following requirements:

(1) the required navigation and communication equipment must be inspected and approved;

(2) the aircraft must be properly registered and certificated as airworthy;

(3) the operator must develop a journey log in accordance with Article 34 of the Convention on International Civil Aviation. The Article states, in part, "There shall be maintained in respect to every aircraft engaged in international navigation a journey logbook in which shall be entered particulars of the aircraft, its crew, and of each journey . . . ."

NOTE: The term "logbook" in this context means a navigation log and/or plotting chart that may be kept in the form of electronic data. This record should be maintained for 6 calendar-months following the flight.

(4) the crew(s) must have international operations qualifications as certified by an individual U.S. citizen who must accept responsibility for the crew's operation in international airspace. Crews must meet the applicable requirements stated in section 1, paragraph 7D. If the inspector determines the crew's qualifications to be inadequate, a validation test will be required. Qualifications for the issuance of an LOA may be satisfied by one of the following:

(a) Completing an operator's oceanic operations training program.

(b) Completing a commercial oceanic operations training program.

(c) Submitting military training records indicating prior oceanic operations experience.

(d) Other methods indicating to the inspector that the operator has been assured that the crew can safely conduct oceanic operations (examples could include written or oral testing).

NOTE: Specific training is not required by the regulations or by Annex 2 to the ICAO Rules of the Air. Inspectors should exercise a great deal of latitude in determining qualifications. For example, a record of previous flights in MNPS airspace without incident is sufficient to indicate that the crew is qualified.

(5) For a crew to be considered as being qualified for oceanic operations, crew members must be knowledgeable in the following subject areas:

(a) ICAO operational rules and regulations;

(b) ICAO measurement standards;

(c) use of oceanic flight planning charts;

(d) sources and content of international flight publications;

(e) itinerary planning;

(f) FAA international flight plan, ICAO flight plan, and flight log preparation;

(g) route planning within the special use airspace where flights are to be conducted;

(h) en route and terminal procedures - different from U.S. procedures;

(i) long-range, air-to-ground communication procedures;

(j) structure of the special use airspace where the flights are to be conducted;

(k) air traffic clearances;

(l) international meteorology, including significant weather charts, prognostic weather charts, tropopause prognostic charts, and TAF's;

(m) specific en route navigation procedures for each type of navigation equipment required for use in the special use airspace; and

(n) emergency procedures, including required emergency equipment, search and rescue techniques, navigation equipment failure techniques, and communication equipment failure techniques.

11. PHASE TWO. Phase two begins when the operator formally submits a proposal for FAA evaluation. The FAA makes initial examination of the documents for completeness with respect to requirements established in phase one. As a result of phase two, the proposal is accepted or returned with an explanation of deficiencies.

A. Initial Action. In phase two, the inspector's initial action is to review the operator's submission to ensure that the proposal is clearly defined and that the documents specified in phase one have been provided. The required information must be complete and detailed enough to permit a thorough evaluation of the operator's ability and competence to fully satisfy the applicable regulations, national policy, and safe operating practices in oceanic operations. The inspector also queries the Flight Standards Automation System (FSAS) data base to obtain the flightcrew's accident, incident, and pilot violations history to determine eligibility, and to ascertain whether the aircraft registration and operator citizenship satisfy the requirements of 14 CFR part 47. Authorization for operations in special use airspace requires that an individual U.S. citizen be responsible for crew performance in MNPS airspace. Phase two does not include a detailed operational and technical evaluation or analysis of the submitted information (see phase three). However, in phase two the submission must be examined to assess the completeness of the required information.

B. Unsatisfactory Submission. If the operator's submission is not complete or the quality is obviously unacceptable, it must be immediately returned before any further review and evaluation is conducted.

(1) Normally, an unacceptable submission is returned with a written explanation of the reasons for its return.

(2) In complex cases, a meeting with the operator's key personnel may be necessary to resolve issues and agree on a mutually acceptable solution. If mutual agreements cannot be reached, the inspector must terminate the meeting, inform the operator that the submission is unacceptable, and return the submission.

(3) If all parties are able to reach agreement on measures to correct omissions or deficiencies, and the principal inspectors (operations, maintenance, and avionics, if applicable) determine that the submission is acceptable, the operator is informed, and phase three begins.

C. Status Reports. It is important for the inspector involved to keep the operator advised of the status of the proposal. If the inspector takes no other action, or if the submission is deficient and not returned in a timely manner, the operator may assume that the FAA has tacitly accepted the submission and is continuing with the process. Timeliness of action depends on the situation and on the inspector's judgment.

13. PHASE THREE. During phase three, the FAA evaluates the operator's formal proposal for compliance with the regulations, compliance with the direction provided in this handbook, and compliance with other safety-related documents and safe operating practices. If the results of the evaluation are unsatisfactory, the proposal is returned to the operator for correction and/or termination of the phase. Planning of phase four (if required) may begin during phase three. When the results of the evaluation are satisfactory, proceed with phase four (if a demonstration is required) and grant conditional approval or acceptance, if appropriate. Proceed to phase five if a demonstration is not required.

A. Detailed Analysis. Phase three is the FAA's detailed analysis, review, and evaluation of the operator's proposal. In phase three, the FAA evaluation is focused on the form, content, and technical quality of the submitted proposal.

B. Evaluation Criteria. The inspector must ensure that the documents adequately establish the operator's ability and competence to conduct operations safely in accordance with the submitted proposal. Operators must present their aircraft at a location convenient to the operator and the inspectors. A representative minimum flightcrew must accompany the aircraft to the inspection site for evaluation of the crew's qualifications to operate navigation and communication equipment in accordance with the approved manual.

Additional crews do not need to be present during this inspection, but a representative of the operator will be required to certify, by the signing of the LOA, that all crews operating aircraft in special use airspace are at least as qualified as the representative crew. Communication and navigation equipment must be inspected by an avionics inspector to ensure that the installation was done in a manner approved by the Administrator (refer to FAA Order 8300.10 Airworthiness Inspector's Handbook, chapter 241), and to verify that the aircraft has the required communication and navigation equipment for operations in MNPS airspace.

C. Equipment Manuals. Operations manuals are required for all navigation equipment. These manuals must contain the material required to define all operational limitations associated with the system's performance. For example, in the case of a station referenced system, the manual would include details of the areas where an adequate signal level may be received or, in the case of an inertial system, any limitations of the system's ground alignment and of the time period within which adequate navigational performance within specified limits can be reasonably assured.

D. Addressing Deficiencies. During phase three the inspector must address any deficiencies in the submitted material in a timely manner before proceeding to subsequent phases. Discussion with the operator may be sufficient to resolve certain discrepancies or questions or to obtain additional information. It may be necessary to return certain portions of the submission to the operator for specific changes. However, when an inspector determines that, for specific reasons, the material is unacceptable, the inspector must return the proposal to the operator with an explanation and immediately terminate the process and close the PTRS file. If the results of the evaluation are acceptable and a demonstration is necessary, the inspector may need to grant conditional, initial, or provisional approval of the proposal, pending the results of the demonstration, before continuing with the process.

E. Phase Four Planning. An important aspect of phase three is for inspectors to begin planning the conduct of phase four. While evaluating the operator's formal proposal, inspectors should begin to formulate plans to observe and evaluate the operator's ability to perform, if necessary. These plans must be completed before the actual demonstrations. Inspectors should be aware that situations may arise when a crew that has been conducting oceanic operations under 14 CFR part 135 requests approval to operate under part 91, or vice versa. In either case, the inspector may grant credit for the previous operational experience if it is determined that operations can be safely conducted under either set of regulations.

15. PHASE FOUR. During phase four, the FAA observes the validation test, and the operator demonstrates ability. As a result of phase four, the validation test is either satisfactory or unsatisfactory.

A. Observation and Evaluation of Demonstration. Phase four is an operational evaluation of the operator's ability to function in accordance with the proposal evaluated in phase three. This phase may be completed in phase three unless the inspector determines that a validation test is required. If a validation test is required, it will be necessary to complete this phase in accordance with FAA Order 8400.10, Air Transportation Operations Inspector's Handbook, volume 3, chapter 9.

B. Evaluation Criteria. Criteria for evaluating an operator's eligibility for an LOA are described in section 1.

C. Handling Discrepancies. The inspector must plan for the conduct and observation of the validation test, including such items as participants, evaluation criteria, and sequence of events. During these tests it is normal for minor discrepancies to occur. Discrepancies can often be resolved during the tests by obtaining commitments from responsible company officials. Inspectors may also request the assistance of the regional oceanic focal point or an FAA navigation specialist during this phase. If any questions should arise with regards to the issuance of an LOA, principal inspectors should request guidance from a navigation specialist at one of the following locations: the SFO IFO at (415) 876-2765, the NYC FSDO at (718) 553-1848, or AFS-540 at (703) 661-0333.

(1) The inspector responsible for overseeing a demonstration must evaluate each discrepancy in terms of its overall impact on the operator's ability and competence to conduct the proposed operation.

(2) The inspector must stop the demonstration in phase four when deficiencies or unacceptable levels of competency are observed. The inspector must identify the phase of the general process to which the applicant must return or decide to terminate the process entirely. If the demonstration is unacceptable because crewmembers were unable to perform their assigned duties, it may be appropriate to advise the operator that the process is terminated and a new proposal should be submitted.

D. Acceptable Demonstrations. If the FAA evaluation of the operator's demonstrated ability is acceptable, the process continues. An operator will not, under any circumstances, be authorized or otherwise approved to conduct any particular operation until all airworthiness and operations requirements are met and the operator is clearly capable of conducting a safe operation in compliance with FAA regulations and safe operating practices.

17. PHASE FIVE. During phase five, the FAA approves or accepts a proposal.

A. Indicating Approval. Approval is granted by the issuance of an authorization in the format illustrated in figure 222-1. Upon satisfactory completion of the aircraft and crew inspection, the inspector issues the approval. The inspector assigns an authorization number in the manner prescribed in paragraph D below, enters the issue date and expiration date, checks one of the approval blocks (MNPS or RVSM) enters the information into the PTRS system and gives the original letter, signed by the district office manager, to the operator.

NOTE: Inspectors issuing an LOA for routes approved for aircraft with short-range navigational equipment must note this limitation on the LOA. The limitation should be entered as follows: A statement "All routes authorized for aircraft with short-range navigation equipment in chapter 222, section 2, FAA Order 8700.1."

NOTE: All LOA's must contain entries for each of the categories listed in figure 222-1. Respond to every item contained in figure 222-1. For example, the category "crew training conducted by" may have an entry of "none," "self," "company training," or the name of a commercial oceanic training course.

B. Acceptances. Other proposals, submissions, or requests not requiring specific FAA approval but required to be submitted to the FAA, are items that are presented for acceptance. Acceptance of an operator's proposal may be accomplished by various means including a letter, verbal acceptance, or by taking no action, which indicates there is no FAA objection to the proposal.

C. Conditional Approval or Acceptance. Sometimes FAA approval or acceptance of an operator's proposal may be conditional in nature. For example, a training program may be initially approved, provided the simulator to be used in that program receives approval from the National Simulator Evaluation Team.

D. Assign an Authorization Number. Inspectors must compose an authorization number to be included on the authorization for tracking purposes. Utilize the four-place alpha-numeric code for the district office. This code can be located in the district office edit table in the FSAS. This code, combined with the year in which the authorization is issued, and the sequential number of the authorization issued in that year by that office, make up the authorization number. An example of an authorization number follows: SWO192015 indicates that the authorization was issued by FSDO-01 in the southwest region in 1992 and was the fifteenth authorization issued that year.

19. RENEWAL OF AN LOA. Requirements for renewal of an LOA are the same as those for original issuance. If no change of equipment has been made and the same individual is still in charge of crew training in international operations, a new LOA may be issued without a re-inspection of the aircraft or a validation flight.

21. DENIAL OF A REQUEST FOR AN LOA. If an operator is unable to satisfy all requirements for issuance of an LOA, the inspector shall deny the request, notify the operator by letter (figure 222-3), and return all submitted documents to the operator.

23. COMPLETION.

A. PTRS. Upon completion of all of the above phases, inspectors should complete a PTRS Data Sheet and then enter the information into the PTRS.

B. Entries. The following specific entries are required for this task:

(1) Enter part 91 reference and activity number 1406 (5433 for avionics) for North Atlantic operations. Enter activity number 1408 (5434 for avionics) for other areas. Operators under part 125 will have operations specifications issued in lieu of a letter of authorization.

(2) Under the Miscellaneous item in Section I, enter "MNPSAUTHORIZ."

(3) Enter the FSDO identifier and LOA number in the National Use field of Section I; e.g., CVG95-003.

(4) Make the following entries in Section IV:

(a) Enter Primary/Key code B719.

(b) Enter Opinion code "I."

(c) In the Comment Text field, enter the LOA expiration date and the name, address, and telephone number of the individual responsible for operations as stated on the LOA.

25. TASK OUTCOMES. The completion of this task results in:

A. Issuance of an LOA authorizing operations in special use airspace.

B. Renewal of an LOA.

C. Denial of application for an LOA.

27. FUTURE ACTIVITIES.

A. The operator may apply for renewal of an existing LOA.

B. The inspector may be asked to investigate a reported navigational error, altitude deviation, or erosion of longitudinal separation.

C. The inspector may be asked to verify an LOA.

D. An LOA may be canceled.

FIGURE 222-1

FORMAT FOR AN LOA TO OPERATE IN THE NAT MNPS

This letter constitutes approval for the named aircraft to operate in the North Atlantic Minimum Performance Specification Airspace (NAT MNPS) and/or Reduced Vertical Separation Minimum (RVSM) airspace or to conduct oceanic flight by the authorized operator or crew listed under the conditions and limitations below.

Aircraft make and model _____ N-Number _____

Aircraft serial number _____ Aircraft color _____

NAVIGATION EQUIPMENT

TYPE/MANUFACTURER/MODEL PART NUMBER DATE INSTALLED

_____

_____

_____

COMMUNICATION EQUIPMENT

TYPE/MANUFACTURER/MODEL PART NUMBER DATE INSTALLED

_____

_____

_____

Aircraft base of operations (city, state, zip) _____
Name of aircraft owner/operator _____
Crew training conducted by _____
Print name of person responsible for crew operations or agent for service (must be a U.S. citizen) _____
Signature of person responsible for crew operations or agent for service _____
Street address (cannot be a Post Office box) _____
City, state, zip code _____

FOR FAA USE ONLY (To be completed by issuing office)

This approval is for: MNPS only _____ MNPS and RV SM _____
[*enter ASI's initials*] [*enter initials OR "N/A"*]
Authorization Number _____
Aircraft limitations (if applicable) _____
Program Tracking and Reporting Subsystem (PTRS) tracking number _____
Date of Issuance _____ Expiration Date _____

(*Continued on next page*)

FIGURE 222-1—Continued
FORMAT FOR AN LOA TO OPERATE IN THE NAT MNPS

This authorization is subject to the conditions that all operations conducted within NAT MNPS airspace are in accordance with Title 14 of the Code of Federal Regulations (14 CFR) part 91, § 91.705 and the flight rules contained in International Civil Aviation Organization (ICAO) Annex 2, and that all operations outside of the United States comply with § 91.703 and Annex 2. The person responsible for crew operations or agent for service must accept responsibility for complying with the stated regulations by signing this document. This document is considered invalid until signed. If the person signing this document relinquishes responsibility, changes mailing address, or the aircraft changes ownership or base of operation, this letter becomes invalid and the signee should immediately notify the issuing office of the change. LOA's can be renewed via a letter or fax request submitted at least 30 days prior to the expiration date if no changes have been made. If any changes have been made, application for a new LOA must be made in the same manner as that required for the initial LOA.

_____

[*FSDO manager's signature*]

FIGURE 222-2
FORMAT FOR LETTER TO RENEW AN LOA

FROM: [*person or department requesting LOA*]
[*company name (if applicable)*]
[*street address*] (P.O. Box not acceptable)
[*city, state, zip code*]

TO: Federal Aviation Administration
Flight Standards District Office
[*street address]*
[*city, state, zip*]

Dear Inspector:

Enclosed is a copy of our letter of authorization (LOA) which is due to expire within the next 60 days, and a completed form requesting a new LOA for operations in Minimum Navigation Performance Specification and/or Reduced Vertical Separation Minimum airspace.

I/we further certify that all authorized crews are qualified to operate in oceanic areas.

Sincerely,

[*person's signature responsible for crew operations or agent for service*]

[*typed name of person responsible for crew operations or agent for service*]

[*title*]

[*date*]

NOTE: The letter should be sent to the office that issued expired LOA.

FIGURE 222-3
LETTER INFORMING OPERATOR THAT A REQUEST FOR AN LOA HAS BEEN DENIED

FROM: Federal Aviation Administration
Flight Standards District Office
[*street address*]
[*city, state, zip*]

TO: [*person or department requesting LOA*]
[*company name (if applicable)*]
[*street address]* (P.O. Box not acceptable)
[*city, state, zip code*]

Dear [*name*],

Your request for a letter of authorization (LOA) to operate in [*name of special use airspace*] airspace has been denied for the following reasons:

_____

_____

_____

You may reapply for an LOA upon correction of the discrepancies listed above. You may contact this office at [*telephone number]* if you have any questions.

Sincerely,

[*inspector's signature who reviewed application*]

[*inspector's name*]

[*title*]

FIGURE 222-4
REGULATIONS PERTINENT TO INTERNATIONAL OPERATIONS

This listing is a compilation of regulations that have particular importance in international operations. Crews are advised to reference these regulations prior to planning an oceanic or international flight. This listing of regulations is for guidance only, and does not eliminate or provide relief from other regulations that are not listed. Pilots transporting aircraft internationally should also be aware of the contents of Chapter III, Nationality for Aircraft, in the Agreements of the Chicago Convention.

14 CFR PART 45 - IDENTIFICATION AND REGISTRATION MARKING

SUBJECT	14 CFR
Nationality and Registration Marks - General	45.21
Display of Registration Marks - General	45.23
Size of Registration Marks	45.29
Marking of Export Aircraft	45.31

14 CFR PART 91 - GENERAL OPERATION AND FLIGHT RULES

SUBJECT	14 CFR
Survival Equipment for Overwater Operations	91.509
Radio Equipment for Overwater Operations	91.511
Operation of Civil Aircraft of U.S. Registry Outside of the United States	91.703
Operations Within the North Atlantic Minimum Navigation Performance Specifications Airspace	91.705
Flights Between Mexico or Canada and the United States	91.707
Operations to Cuba	91.709

14 CFR PART 47 - AIRCRAFT REGISTRATION

SUBJECT	14 CFR
Registration Required	47.3
Applicants for Aircraft Registration	47.5
* Certification of U.S. Citizenship	47.7
* Voting Trust	47.8
* Corporation not U.S. Citizen	47.9
Evidence of Ownership	47.11
Effective Date of Aircraft Registration	47.39
Invalid Registration	47.43
Cancellation of Certificate for Export	47.47

* These regulations have specific importance in regard to international operations. They each contain citizenship requirements relative to the legality of an aircraft registration and will be checked by inspectors upon application for any required LOA.

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